

### REMARKS

Claims 21-26 and 28-39 are in this application and are presented for reconsideration. By this Amendment, Applicant has amended claims 21-26 and 28-39, and canceled claims 27 and 40 to improve the clarity and style of this application and to introduce the combined features from the allowable claim 40 into the independent claims 21 and 30.

Applicant thanks the Examiner for the careful reading of the application, and for providing suggestions. Applicant also thanks the Examiner for indicating allowable subject matter. Claim 21 has been amended to include the features of claim 40. Claim 30 has been amended to include the features of claim 40 as well. The rejection indicates that claim 40 includes allowable subject matter. It is Applicant's position that claims 21, 30 and their dependent claims now also include allowable subject matter and define over the prior art. Further, the feature of claim 21, wherein the measurement being done by sensors or transducers arranged on the robot structure is disclosed, for example, on page 3 in lines 4 and 5 and more specifically at the end of page 4 of the specification.

By this Amendment, the Applicant has amended several claims to overcome the Examiner's rejections and respectfully makes assertions for overcoming the rejections of the outstanding Office Action dated October 26, 2006 in the following paragraphs.

### Claim Rejections - 35 USC § 112

Claims 21-29 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

Specifically, the Office takes the position that the claims 20-21 are written in poor language. The Office cites as example in claim 20, that it is unclear as to what is actual measured value, whether the strain gauge measurement is actual, what is transformation, what kind of transformation, or transformation to where, what is interference freedom, what is expected and what is unexpected event.

Applicant notes that the Office Action provides the Office position only with regard to claims 20 to 21, but claim 20 is not on file. Applicant assumes that the claim 20 in the Office Action in actuality, corresponds to claim 21.

Applicant further notes that there are physical **quantities** (or better to reformulate as entities) as energy, force, power, etc., which may have certain **values**. Accordingly, it would be confusing if the application does not make the difference between the physical quantity as such and the specific measured value of such a quantity. However, Applicant, in furtherance of the prosecution of this Application, in response to the above rejection, has clarified claim 21.

Regarding claim 22, the Office asks how a measured value is being detected, whether measuring, in this context, is the same as detecting, and the recitation of comparison of terms such as first or second measured quantities, measured value, measured results are enormously confusing. Further, the Office suggests that in a method claim, the method steps are to be clearly, and orderly specified one by one in a positive language reciting the accomplishment of the claimed method task.

In response, Applicant has clarified the claims in the present Application to overcome

the above rejection.

Claim Rejections - 35 USC § 102

Claims 21-22 have been rejected under 35 U.S.C. 102(b) as being anticipated by the U.S. Patent No. 4,783,107 to Parker (the "Parker '107" reference, hereinafter). The rejection is based on the Office position that the Parker '107 reference discloses all of the combined features of claims 21 and 22.

The prior art as a whole including the Parker '107 reference neither teaches nor suggests the present invention as claimed. The Parker '107 reference deals with gripping an object by the hand of a robot. The Parker '107 reference has two goals, namely the rapid object acquisition and low interaction forces. It must be ensured that each finger of the robot hand is capable of implementing an acquisition strategy in which mislocated objects can be acquired.

Accordingly, the Parker' 107 reference provides a sensory means for sensing a point of close approach between the object and the contacting means, this means, being the fingers, as mentioned in claim 4 of the Park' 107 reference, as cited in the Office Action. Therefore, according to the Parker' 107 reference, the distance between the gripping fingers and an object to be gripped by the fingers, is detected, accordingly, the distance from the fingers to an object which is expected to be there when the fingers have to grip it.

The gripping hand and its fingers are not part of the structure of a robot, which is defined as the supporting parts of a robot, as the robot base with carousel, the rocker, and the robot arm (page 8, paragraph 3 of the specification of the present application).

The object of the application is to avoid an -- unexpected -- collision between the robot and an external object, for example a person, which may be roughly hurt by a robot, when it touches a person with high speed. Other objects may be destroyed by a robot in such a case.

Such objects, as a person or another object, should not be in the moving region of the robot. If there is such an object, then this is unexpected for a robot. Accordingly, the most specific object of the application is to detect unexpected objects and accordingly unexpected events during the normal work of a robot.

According to the present invention, a survey of the robot movement with regard to the security of its working is achieved.

Furthermore, Applicant points out that the measured values of the physical quantities to be measured are, according to the invention, evaluated in a completely different way as from the Parker' 107 reference. It is already stated the object of the Parker' on a seven reference is to grip on object with defined force by the fingers of a gripping hand. In contrast, as also already pointed out, the object of the present invention is to discriminate unexpected events of as a collision, from plant events as normal robot movements. Furthermore, the object of the invention is, in case of a detecting an unexpected event, to move the robot into a safe state, this means to provide a security stop.

Applicant also notes that the Office Action is silent as to claim 28. Further, it is Applicant's position that the Parker' 107 reference does not show the subject matter of claim 28. Furthermore, Applicant also notes that the Office Action is silent as to claim 22 as well, in view of the Parker' 107 reference.

Therefore, the Parker '107 reference does not provide any suggestion or motivation which would lead a person of ordinary skill in the art to believe that such device for detecting unforeseen event would be useful. Instead, the Parker '107 reference leads a person of ordinary skill in the art to regularly scheduled events, which is completely different from the present invention as claimed.

Claim Rejections - 35 USC § 103

Claims 25 and 34 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the Parker '107 reference. The Office admits that the Parker '107 reference does not elaborate on the nature of the strain gauge, but the Office argues that since the strain gauges come in various kind and shape, it would have been obvious for a skilled artisan at the time of the invention to modify Parker to use any kind of desirable strain measuring device such as piezoelectric or optical one.

It is Applicant's position that claims 25 and 34 are not obvious in view of the Parker '107 reference. The present invention as claimed provides for a combination of features not taught by the prior art as a whole including the Parker '107 reference. For instance, there are several differences for the present invention as claimed.

The combination of features not taught by the prior art provides several improved effect for the present invention as claim. For instance, the present invention as claimed has the advantage of providing several improved features including the advantage of detecting unforeseen events based on at least two different physical values.

Therefore, Applicant finds that the Parker '107 reference does not anticipate the current invention and there is no suggestion or motivation to use the teachings of the references to provide the combination as claimed.

As the prior art fails to suggest the combination of features as claimed, Applicant respectfully requests that the Examiner favorably consider the rejection in view of the amended claims and in view of the discussion above. Applicant respectfully solicits allowance of this application.

It is applicant's position that all claims are now allowable. Should the Examiner determine that issues remain that have not been resolved by this response, the Examiner is requested to contact Applicant's representative at the number listed below.

Favorable action is requested.

Respectfully submitted  
for Applicant,

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